What is claimed is:

1. A method of producing organic polymer nanofibers having a reaction to chemical vapors, the method comprising the steps of,

forming a catalysis solution comprising an acid and an oxidizer,

forming a monomer solution comprising a monomer and an organic solvent, and

disposing the catalysis solution upon the monomer solution for forming an aqueous and organic interfacial interface between the catalysis solution upon the monomer solution for generating the organic polymer nanofibers.

2. The method of claim 1 wherein,

the monomer is selected from the group consisting of aniline, pyrrole, thiophene, toluidine, anisidine and other derivatives of aniline such as methylaniline, ethylaniline, 2-alkoxyaniline, and 2,5 dialkoxyaniline for respectively producing polyaniline nanofibers, polypyrrole nanofibers, polythiophene nanofibers, polytoluidine nanofibers, polyanisidine nanofibers, polymethylaniline nanofibers, polyethylaniline nanofibers, poly2-alkoxyanilines nanofibers and poly2,5-dialkoxyanilines) nanofibers respectively.

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3. The method of claim 1 wherein,

the acid is selected from the group consisting of hydrochloric acid, sulfuric acid, nitric acid, perchloric acid, phosphoric acid, acetic acid, formic acid, tartaric acid, methanesulfonic acid, ethylsulfonic acid, 4-toluenesulfonic acid and camphorsulfonic acid.

4. The method of claim 1 wherein,

the oxidizer is selected from the group consisting of ammonium peroxydisulfate, iron chloride and other peroxydisulfate derivates such as sodium peroxydisulfate and potassium peroxydisulfate.

5. The method of claim 1 wherein,

the organic solvent is selected from the group consisting of carbon tetrachloride, benzene, toluene, chloroform, methylene chloride, xylene, hexane, diethylether, dichloromethane and carbon disulfide.

6. The method of claim 1 wherein,

the chemical vapor is selected from the group consisting of acid vapors, basic vapors, and alcohols.

7. The method of claim 1 wherein,

the chemical vapor is selected from the group consisting of acidic vapors, basic vapors, alcohols, volatile organic chemicals, oxidizing agents and reducing agents.

8. The method of claim 1 wherein,

the reaction is selected from the group consisting of a conductivity reaction, an optical reaction, a conformation reaction, a density reaction, an oxidation reaction and a reduction reaction.

9. The method of claim 1 wherein the catalysis solution becomes a polymer solution comprising the polymer nanofiber, and the monomer solution becomes an organic solution depleted of the monomer, the method further comprising the steps of,

separating the polymer solution from the organic solution,

purifying the polymer solution for extracting the polymer nanofibers from the polymer solution.

10. The method of claim 1 further comprising the steps of,

forming a thiol surface layer on gold terminals,

forming a precoating of the polymer nanofibers upon the gold terminals.

11. The method of claim 1 further comprising the step of,

selecting the acid for providing a predetermined sized diameter of the polymer nanofibers.

12. The method of claim 1 wherein,

the polymer nanofibers have diameters less than 500 nm and lengths less than 10 μm.

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13. The method of claim 1 wherein,

the polymer nanofibers are polyaniline nanofib rs having diameters less than 500 nm and lengths 1 ss than 10 μm.

14. A method of producing an organic conducting polymer nanofibers having a reaction to chemical vapors, the method comprising the steps of,

forming a catalysis solution comprising an acid and an oxidizer,

forming a monomer solution comprising a monomer and an organic solvent, and

disposing the catalysis solution upon the monomer solution for forming an aqueous and organic interfacial interface between the catalysis solution upon the monomer solution for generating the conductive organic polymer nanofibers.

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15. The method of claim 14 wherein,

the monomer is selected from the group consisting of aniline, pyrrole, and thiophene for respectively producing polyaniline nanofibers, polypyrrole nanofibers, and polythiophene nanofibers, respectively,

the acid is selected from the group consisting of hydrochloric acid, sulfuric acid, nitric acid, perchloric acid, and camphorsulfonic acid,

the oxidizer is selected from the group consisting of ammonium peroxydisulfate, iron chloride, sodium peroxydisulfate and potassium peroxydisulfate,

organic solvent is selected from the group consisting of carbon tetrachloride, benzene, toluene, chloroform, methylene chloride, xylene, hexane, diethylether, dichloromethane and carbon disulfide,

the chemical vapor is selected from the group consisting of acidic vapors, basic vapors, water, alcohols, organic vapors and reducing agents,

the reaction is change in conductivity reaction.

16. The method of claim 15 wherein,

the acid is camphorsulfonic acid, and

the diameters of the nanofibers are 50 nm.

17. The method of claim 15 wherein,

the acid is hydrochloric acid, and

the diameters of the nanofibers are 30 nm.

18. The method of claim 15 wherein,

the acid is perchloric acid, and

the diameters of the nanofibers are 120 nm.

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